San Leandro ATMS Upgrade

For MTC Feature Presentation

March 8, 2011

By Dean Hsiao

CITY OF SAN LEANDRO

ADVANCED TRAFFIC SIGNAL SYSTEM

Existing Conditions

2 Traffic Operations Centers with icons ATMS

- City Hall
- Public Works

56 Signals

- 36 signals via fiber interconnect
- 6 signals via “last mile” wireless interconnect
- 14 isolated signals (3 will be interconnected)
- 17 video detection intersections
- 10 communication channels

12 Pelco CCTV Cameras

- 12 communication channels

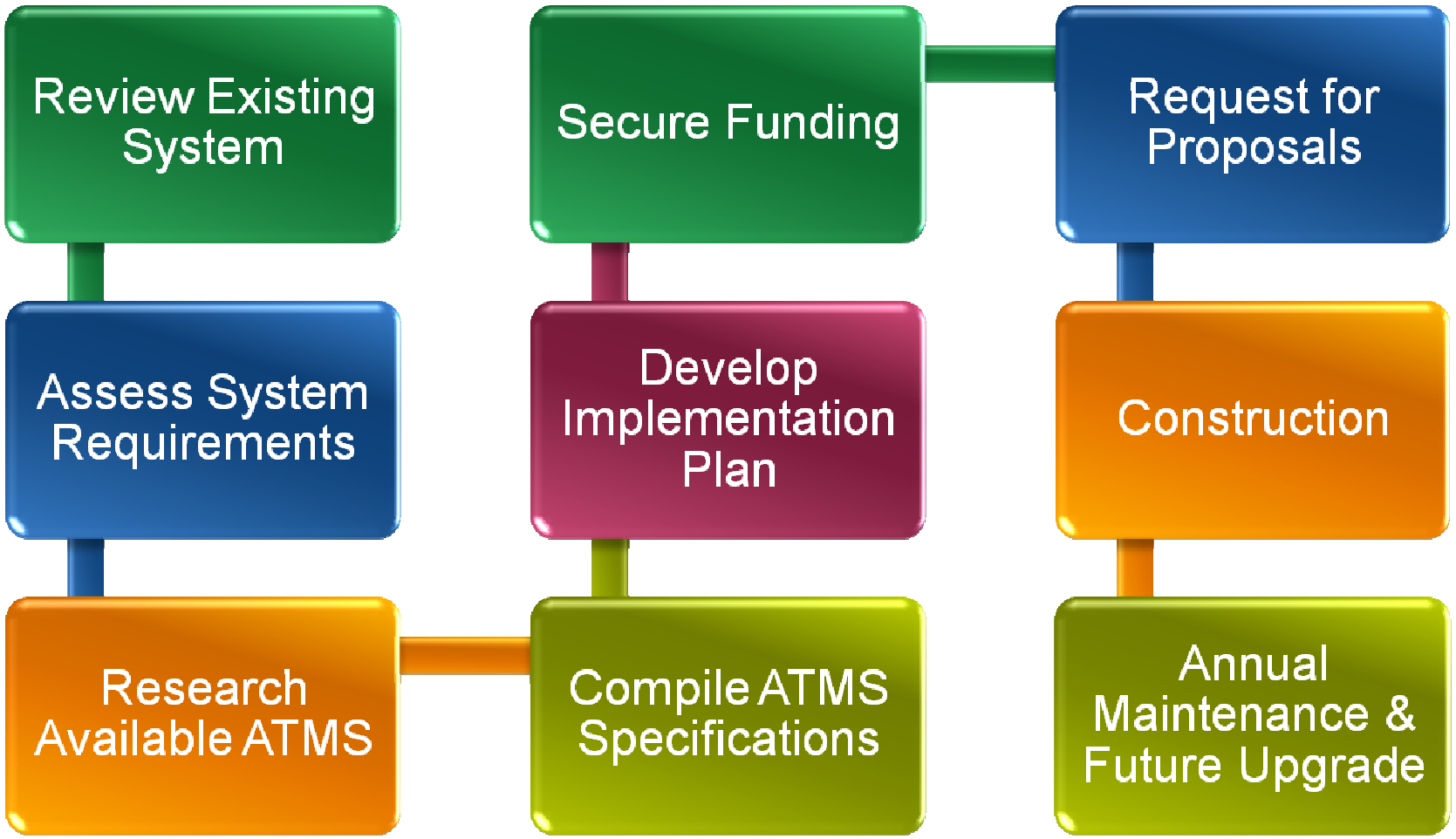
06-15-09 MON
13:32:04
24
06/15/09 13:56:00
SYNCHRO and SIMTRAFFIC
Signal Timing and Traffic Simulation Software
PLEASE
DO NOT DISTURB-
TIME-LAPSE RECORDING
IN
PROGRESS

Communication Room

Review Existing Aging ATMS

- Existing icons ATMS installed in late 1990s
- Bulky and heavy traffic console
- Limited functions
- Lacking national standards
- End of life cycle
- Serial communications system
- Proprietary communications protocol
- Failing equipment

Project Development



System Needs Assessment

- Fast communication speed
- More devices on one communication channel
- Access from various locations
- Data sharing with other departments/agencies
- Multifunctional traffic operations center
- Flexible furniture arrangement
- Future expansion capability

Visited ATMS Systems

ATMS.now	• Elk Grove • Roseville
i2	• Santa Monica • City of Orange
icons	• Ontario
TransSuite	• Stockton • Sacramento • San Jose

TRAFFIC MANAGEMENT CENTER
CITY OF ORANGE
INCORPORATED
APRIL 6, 1888
ORANGE COUNTY, CALIFORNIA

Orange City

Santa Monica
SONY

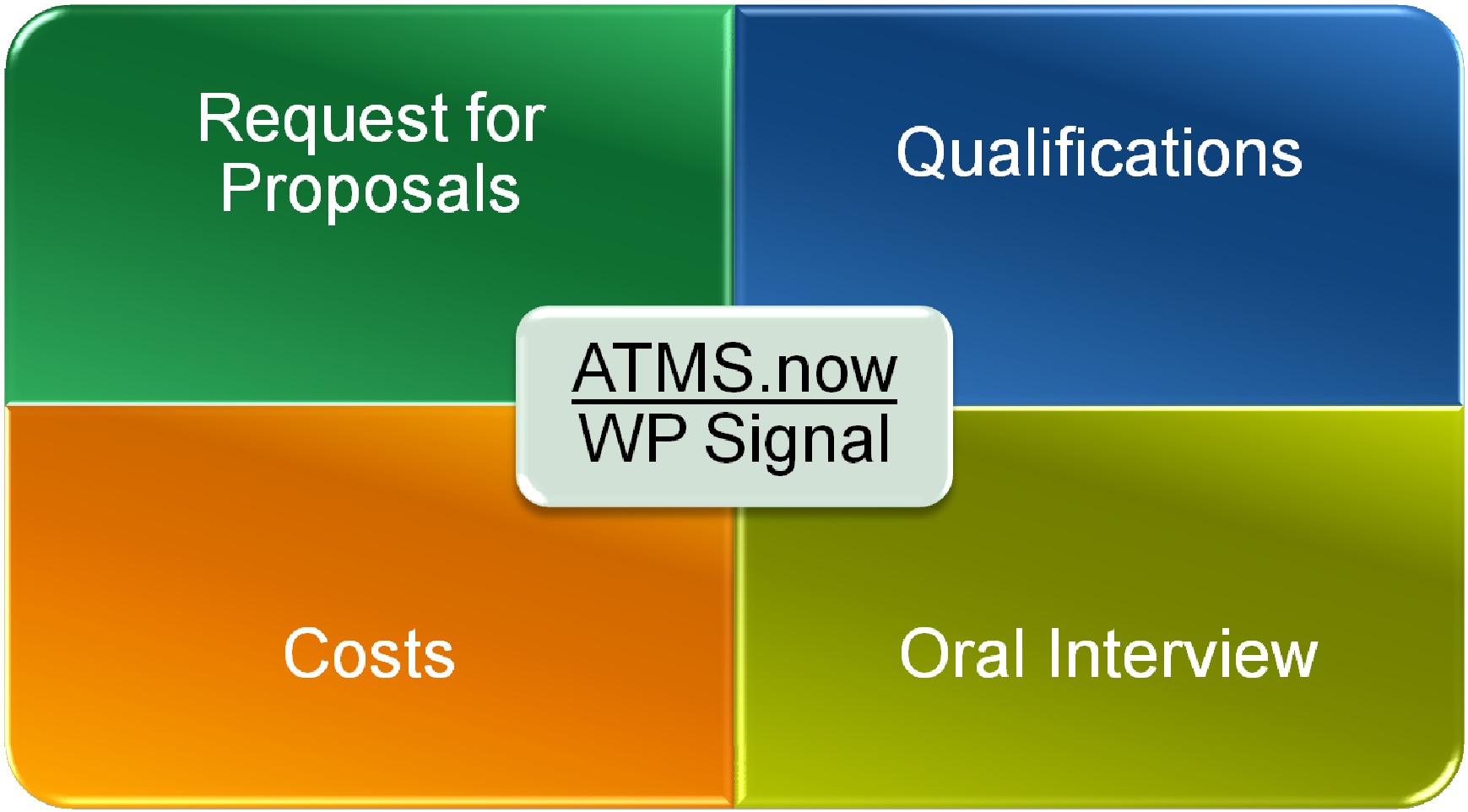
Stockton

San Jose

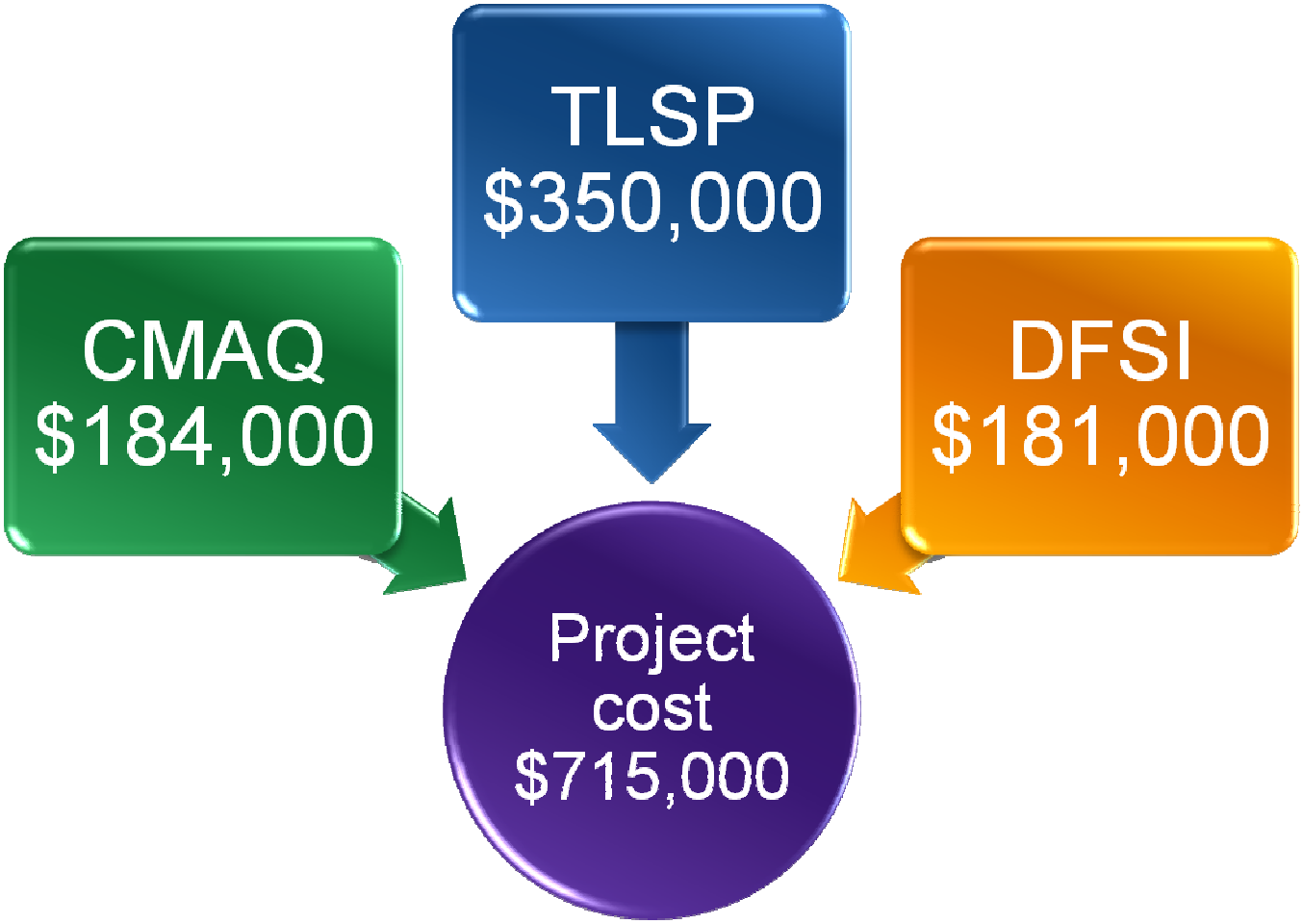
Sacramento

262 MGM / CONSTELLATION
60 Chavez/Vignes SWC
CAMERA 3
PORT 61
54 1ST / MAIN

System Selection

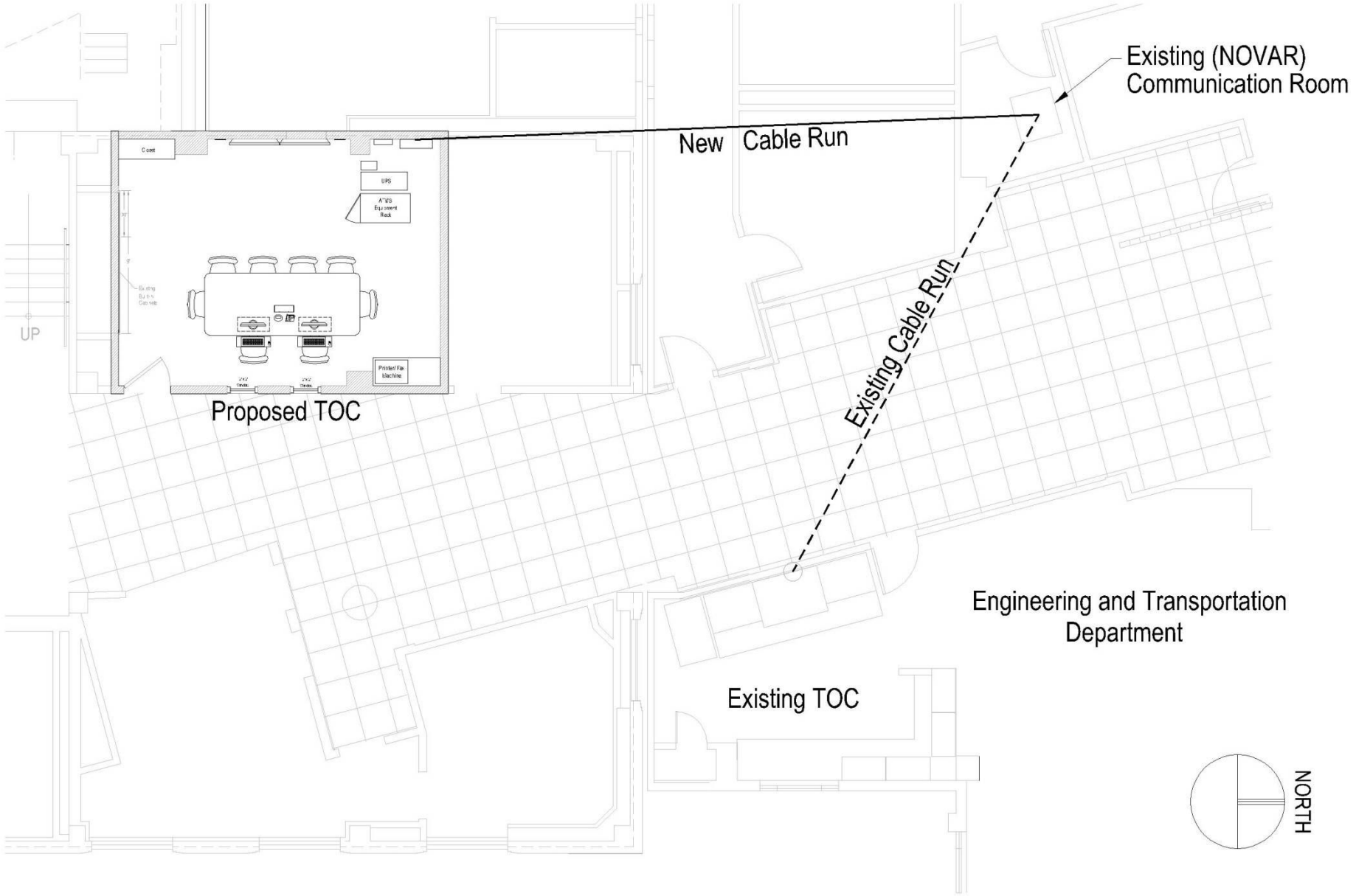


Project Funding



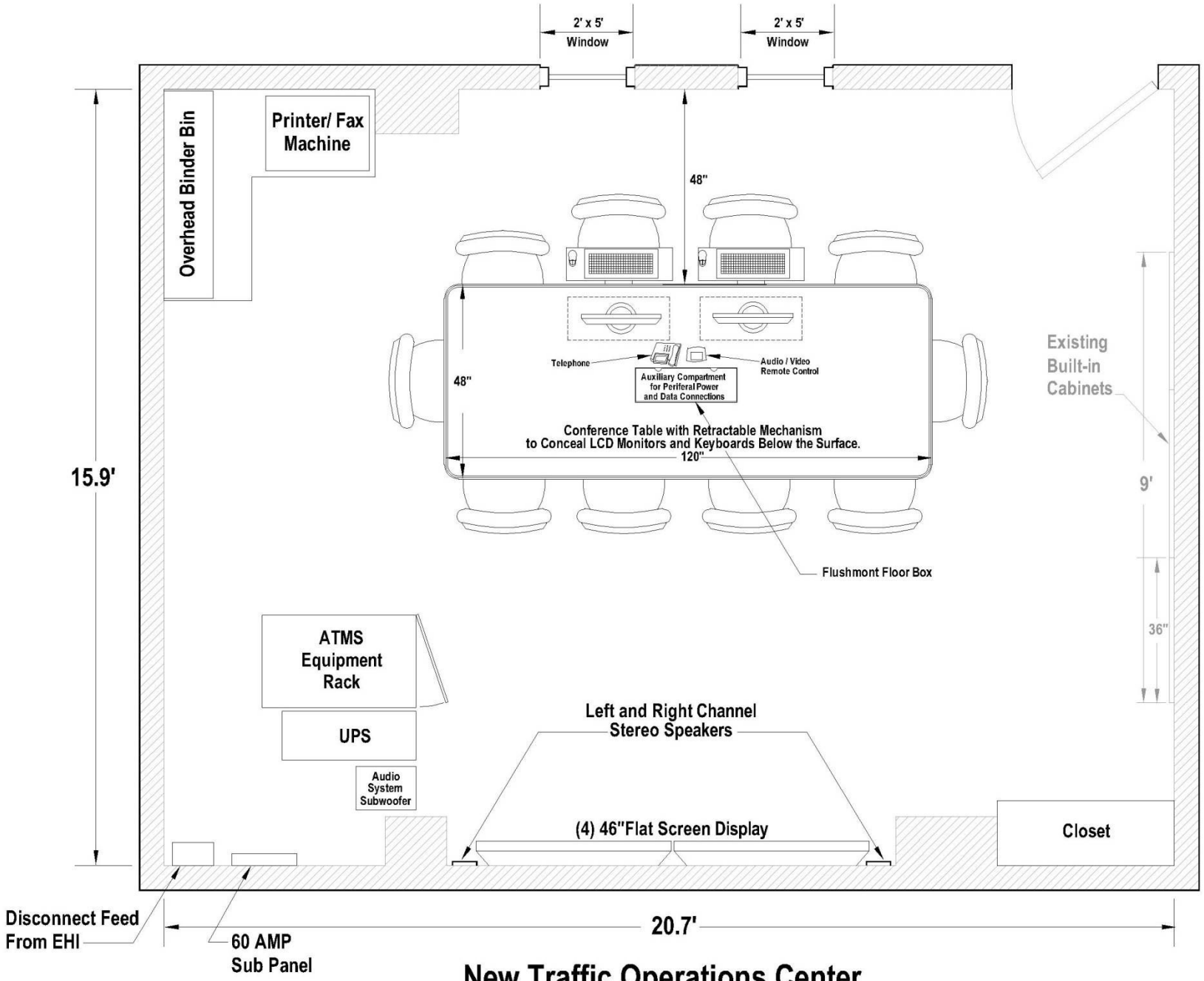
Project Improvements

Old System	New System
Proprietary communication protocol	National Standard Protocol
Serial Communication 19.2kps	Ethernet Communication 100Mbps
6 controllers on one channel	30 IP-Based devices on one channel
Analog Video System	Digital video system
Recording video one channel at a time	Recording video from multiple channels
Two video viewers	Unlimited video viewers
Bulky traffic console	Innovative traffic console
Single purpose TOC	Multifunctional TOC
No more updates	Available Future Expansion Modules



New Traffic Operations Center

Relocation Diagram



New Traffic Operations Center
As-Built Floor Plan-2

Display Wall

Input

- Workstation
- Cable TV
- Blu-ray Player
- VGA Port (e.g., Laptop connection)
- RCA Ports (e.g., VCR connection)
- Mini Jack (MP3 connection)
- AM/FM Radio

Output

- 4 46” monitors
- 2 speakers with a subwoofer

ECONOLITE
ASC/2-2100
Series 800
TS2
153
04/13/2010 14:24

QUAKES

CITY OF SAN LEANDRO
Advanced Traffic Maintenance System

Equipment Rack

MX 3000
DYNAMIC ENTERTAINMENT SYSTEM
DEFAULT
PC 1 EXT
PC 2 EXT
PC 1 and 2
CABLE
BLU-RAY
PC AUX
VIDEO AUX
CUSTOM
AUDIO
ALL OFF
02/23/2011 09:01

MX 3000
DYNAMIC ENTERTAINMENT SYSTEM
VIDEO SOURCES
PC 1
PC 2
PC AUX
PC 1 EXT
PC 2 EXT
VIDEO AUX
BLU-RAY
CABLE
02/23/2011 09:01

MX 3000
DYNAMIC ENTERTAINMENT SYSTEM
PC 1
MONITOR 1
MONITOR 2
ALL MONITORS
MONITOR 3
MONITOR 4
02/23/2011 09:01

MX 3000
DYNAMIC ENTERTAINMENT SYSTEM
AUDIO SOURCES
PC 1
PC 2
TABLE
CABLE
BLU-RAY
TUNER
MINI JACK
02/23/2011 09:02

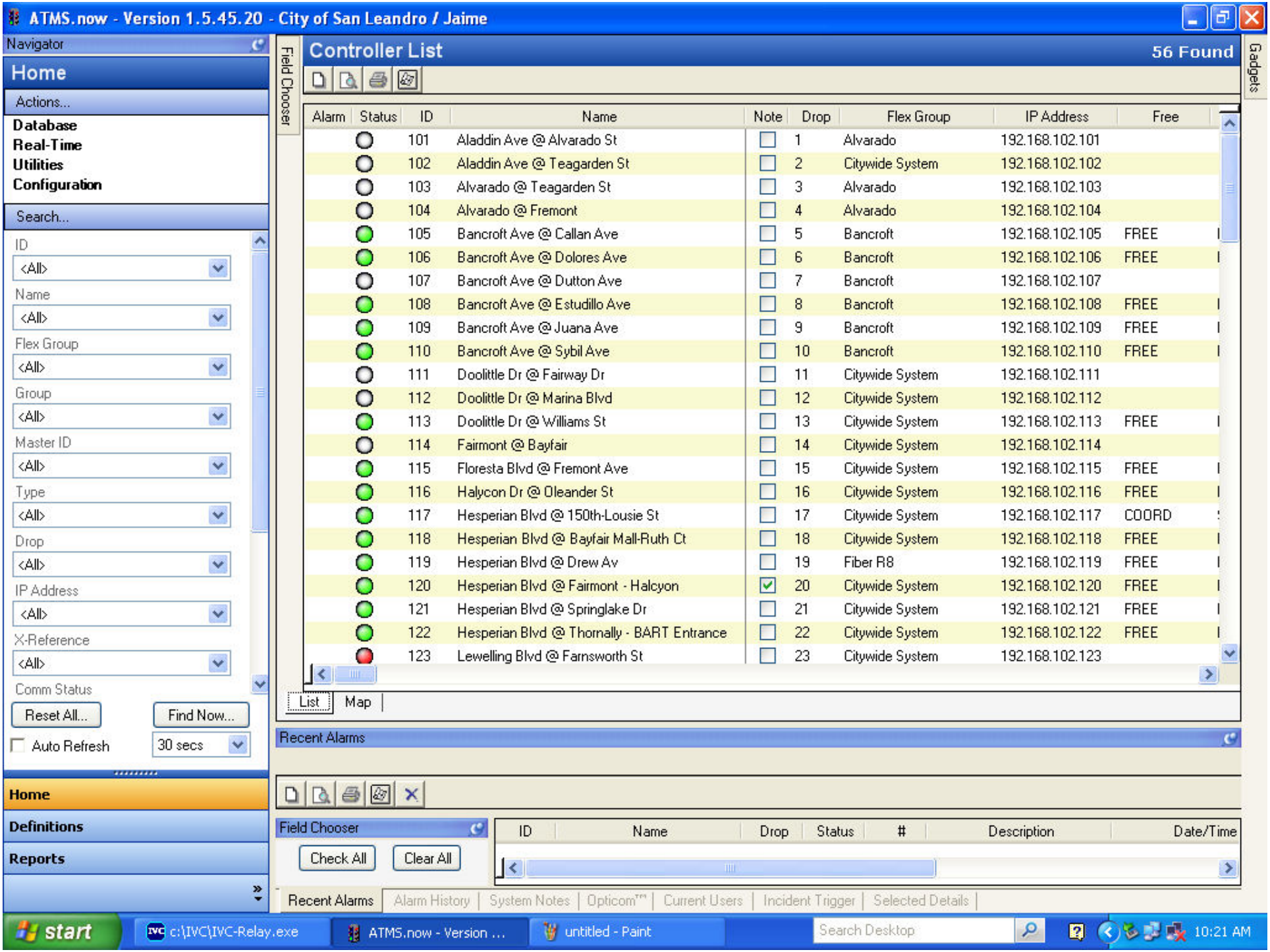
Connector Box

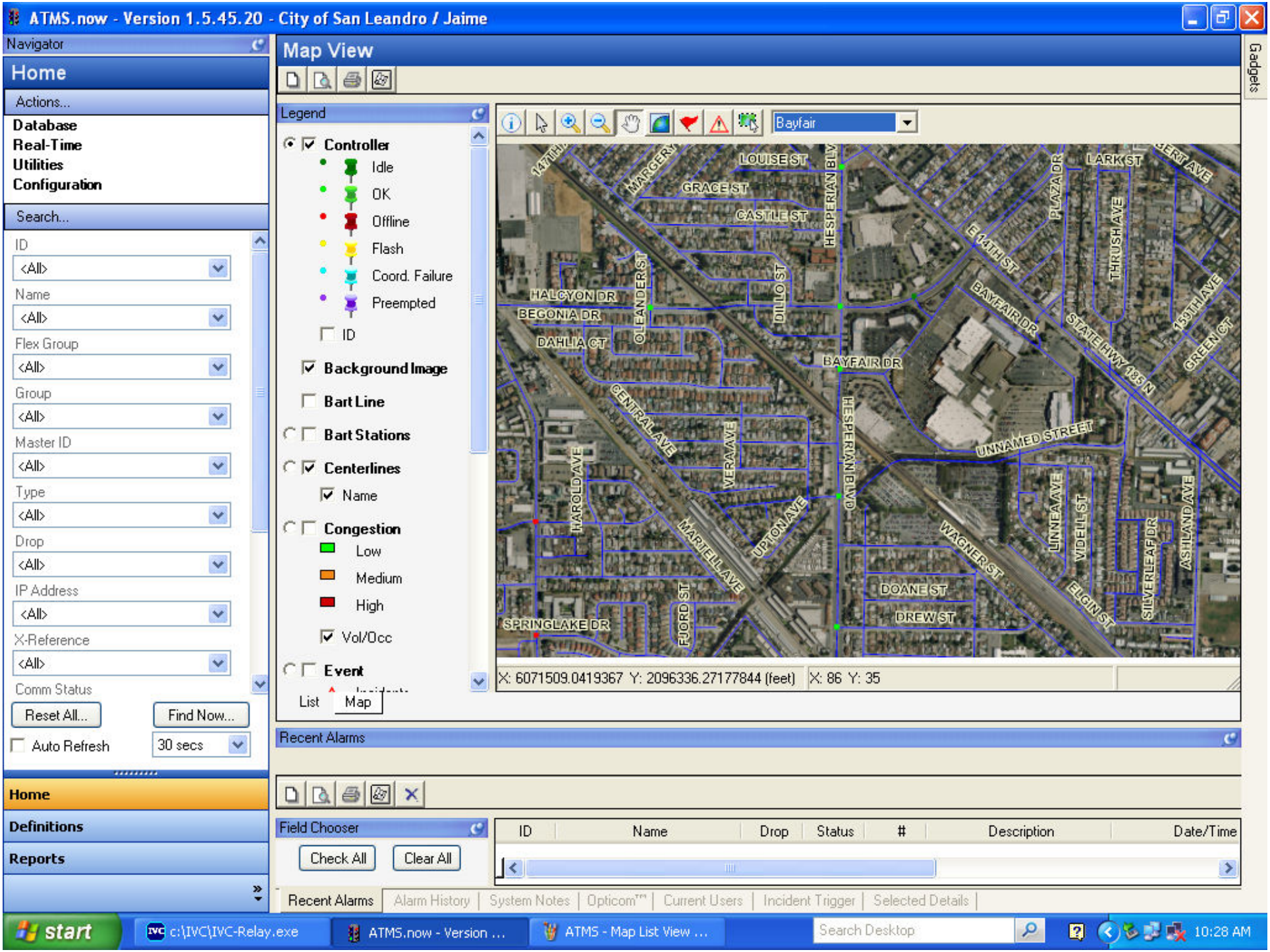
ATMS.now - Version 1.5.45.20 - City of San Leandro / dhsiao
Controller List
56 Found
Marina @ Merced 05/10/2010 13:26:18
LIVE
FOX NEWS
CRITIC WARNS OBAMA'S SUPREME CT PICK COULD MEAN JOB LOSSES
YOUR WORLD CAVUTO
UT REPUBS IN THE SENATE SAY THEY'RE GOINC
DOW UTL 381.65
05/10/2010 13:21

ATMS.now - Version 1.5.45.20 - City of San Leandro / TOC
Map View
Bayfair
HALCYON DR
FAIRMONT DR
ADASON DR
HESPERIAN BLVD
BAYFAIR WAY
BAYFAIR DR
RUTH CT
HOLLYHOCK DR
X: 6089449.69433834 Y: 2081793.42730983 (feet) X: 31 Y: 324
List
Map
03/30/2010 12:57

Hesperian @ Fairmont/Halycon 03/30/2010 13:04:17
03/30/2010 12:58

DANGER
HIGH
VOLTAGE
LAKESIDE VILLAGE


ATMS.now - Version 1.5.45.20 - City of San Leandro / Jaime
Navigator
Home
Actions...
Database
Real-Time
Utilities
Configuration
Search...
ID
<All>
Name
<All>
Flex Group
<All>
Group
<All>
Master ID
<All>
Type
<All>
Drop
<All>
IP Address
<All>
X-Reference
<All>
Comm Status
Reset All...
Find Now...
Auto Refresh
30 secs
Home
Definitions
Reports
Field Chooser
Controller List
56 Found
Gadgets
Alarm Status ID Name Note Drop Flex Group IP Address Free
101 Aladdin Ave @ Alvarado St 1 Alvarado 192.168.102.101
102 Aladdin Ave @ Teagarden St 2 Citywide System 192.168.102.102
103 Alvarado @ Teagarden St 3 Alvarado 192.168.102.103
104 Alvarado @ Fremont 4 Alvarado 192.168.102.104
105 Bancroft Ave @ Callan Ave 5 Bancroft 192.168.102.105 FREE
106 Bancroft Ave @ Dolores Ave 6 Bancroft 192.168.102.106 FREE
107 Bancroft Ave @ Dutton Ave 7 Bancroft 192.168.102.107
108 Bancroft Ave @ Estudillo Ave 8 Bancroft 192.168.102.108 FREE
109 Bancroft Ave @ Juana Ave 9 Bancroft 192.168.102.109 FREE
110 Bancroft Ave @ Sybil Ave 10 Bancroft 192.168.102.110 FREE
111 Doolittle Dr @ Fairway Dr 11 Citywide System 192.168.102.111
112 Doolittle Dr @ Marina Blvd 12 Citywide System 192.168.102.112
113 Doolittle Dr @ Williams St 13 Citywide System 192.168.102.113 FREE
114 Fairmont @ Bayfair 14 Citywide System 192.168.102.114
115 Floresta Blvd @ Fremont Ave 15 Citywide System 192.168.102.115 FREE
116 Halycon Dr @ Oleander St 16 Citywide System 192.168.102.116 FREE
117 Hesperian Blvd @ 150th-Lousie St 17 Citywide System 192.168.102.117 COORD
118 Hesperian Blvd @ Bayfair Mall-Ruth Ct 18 Citywide System 192.168.102.118 FREE
119 Hesperian Blvd @ Drew Av 19 Fiber R8 192.168.102.119 FREE
120 Hesperian Blvd @ Fairmont - Halcyon 20 Citywide System 192.168.102.120 FREE
121 Hesperian Blvd @ Springlake Dr 21 Citywide System 192.168.102.121 FREE
122 Hesperian Blvd @ Thornally - BART Entrance 22 Citywide System 192.168.102.122 FREE
123 Lewelling Blvd @ Farnsworth St 23 Citywide System 192.168.102.123
List
Map
Recent Alarms
Field Chooser
Check All
Clear All
ID Name Drop Status # Description Date/Time
Recent Alarms
Alarm History
System Notes
Opticom™
Current Users
Incident Trigger
Selected Details
start
c:\IVC\IVC-Relay.exe
ATMS.now - Version ...
untitled - Paint
Search Desktop
10:21 AM


ATMS.now - Version 1.5.45.20 - City of San Leandro / Jaime
Navigator
Home
Actions...
Database
Real-Time
Utilities
Configuration
Search...
ID
<All>
Name
<All>
Flex Group
<All>
Group
<All>
Master ID
<All>
Type
<All>
Drop
<All>
IP Address
<All>
X-Reference
<All>
Comm Status
Reset All...
Find Now...
Auto Refresh
30 secs
Home
Definitions
Reports
Map View
Legend
Controller
Idle
OK
Offline
Flash
Coord. Failure
Preempted
ID
Background Image
Bart Line
Bart Stations
Centerlines
Name
Congestion
Low
Medium
High
Vol/Occ
Event
List
Map
Bayfair
LOUISE ST
GRACE ST
CASTLE ST
HESPERIAN BLV
LARK ST
PLAZA DR
E 14TH ST
THRUSH AVE
HALCYON DR
BEGONIA DR
DAHLIA CT
OLEANDER ST
DILLO ST
BAYFAIR DR
STATE HWY 185 N
GREEN CT
CENTRAL AVE
VERA AVE
HAROLD AVE
MARTELL AVE
UPTON AVE
UNNAMED STREET
WAGNER ST
LINNEA AVE
VIDELL ST
ASHLAND AVE
SILVERLEAF DR
ELGIN ST
DOANE ST
DREW ST
SPRINGLAKE DR
FJORD ST
X: 6071509.0419367 Y: 2096336.27177844 (feet)
X: 86 Y: 35
Recent Alarms
Field Chooser
Check All
Clear All
ID
Name
Drop
Status
#
Description
Date/Time
Recent Alarms
Alarm History
System Notes
Opticom™
Current Users
Incident Trigger
Selected Details
Gadgets
start
c:\IVC\IVC-Relay.exe
ATMS.now - Version ...
ATMS - Map List View ...
Search Desktop
10:28 AM

ATMS.now - Version 1.5.45.20 - City of San Leandro / Jaime

Navigator

Definitions

Actions...

- **Alarm**
- **Alarm Notification**
- **Backup and Archive**
- **Controllers Offline**
- **Camera Tour**
- **Congestion**
- **Device**
- **Device Flex Group**
- **Device and Event Locations**
- **Event**
- **Flex Group**
- **GIS**
- **Group**
- **Incident Trigger**
- **Jurisdiction**
- **Scan Builder**
  - Builder
- **Report Criteria**
- **Scheduler**
- **User**
- **User Distribution**
- **User Group**
- **Vehicle Classification/Counters**

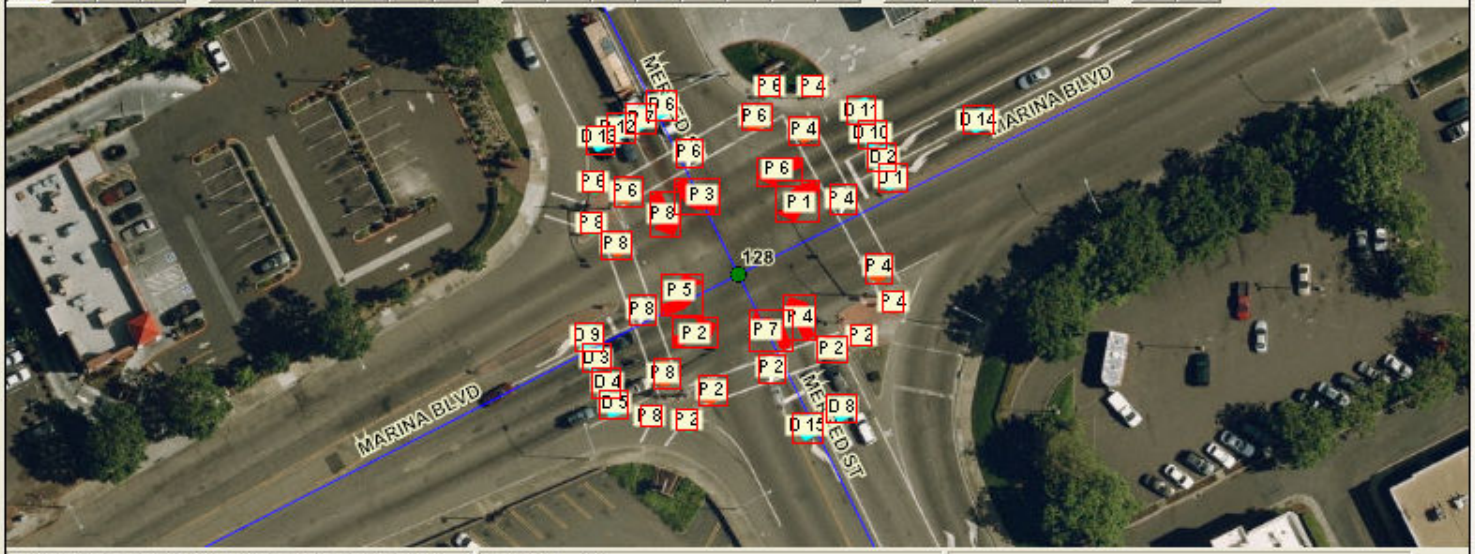
Home

Definitions

Reports

Scan Builder

ID	NAME	X_COORD	Y_COORD
125	MacArthur Blvd @ Dutton Ave	6087378.52428722	2094049.25346292
126	MacArthur Blvd @ Estudillo	6087728.05153976	2092292.33561587
127	Marina Blvd @ Alvarado St	6082134.26861465	2086753.3514719
128	Marina Blvd @ Merced St	6078333.09936781	2084835.85965253
129	Marina Blvd @ Teagarden - Wayne Ave	6080775.5796396	2086039.92927036
130	Merced St @ Fairway Dr	6079256.01664918	2082990.85659096
131	Merced St @ Reynolds Brown Dwy	6078570.46956985	2084365.53504261



X: 6076338.89964456 Y: 2081731.20966832 (feet) | X: 150 Y: 46

Apply

Recent Alarms

Field Chooser

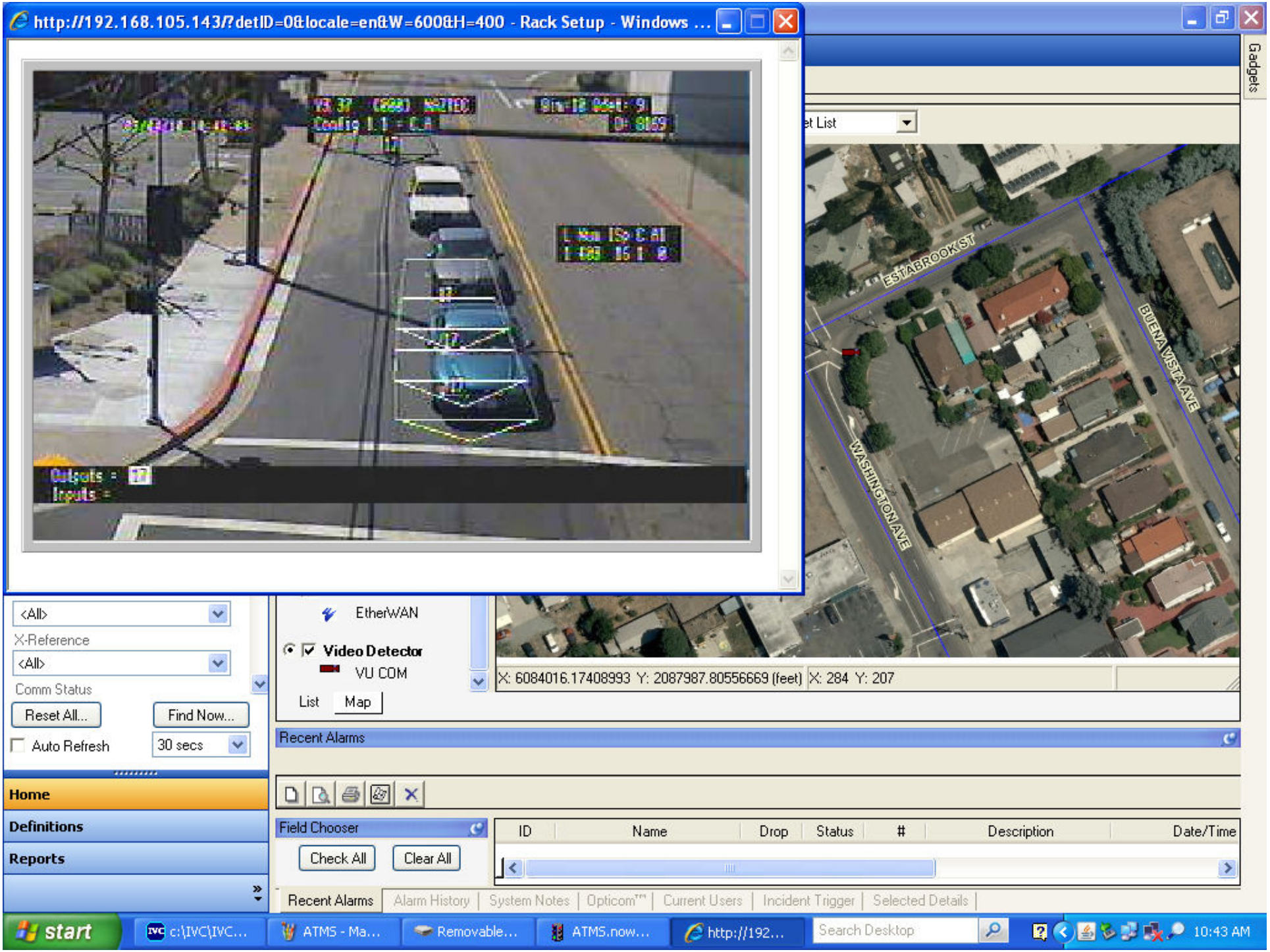
Check All | Clear All

ID	Name	Drop	Status	#	Description	Date/Time

Recent Alarms | Alarm History | System Notes | Opticom™ | Current Users | Incident Trigger

Gadgets

start | c:\IVC\IVC-Relay.exe | ATMS.now - Version ... | ATMS - Definitions - S... | Search Desktop | 10:32 AM


http://192.168.105.143/?detID=0&locale=en&W=600&H=400 - Rack Setup - Windows ...
Gadgets
ESTABROOK ST
BUENA VISTA AVE
WASHINGTON AVE
EtherWAN
Video Detector
VU COM
List
Map
X: 6084016.17408993 Y: 2087987.80556669 (feet)
X: 284 Y: 207
<All>
X-Reference
<All>
Comm Status
Reset All...
Find Now...
Auto Refresh
30 secs
Home
Definitions
Reports
Recent Alarms
Field Chooser
Check All
Clear All
ID
Name
Drop
Status
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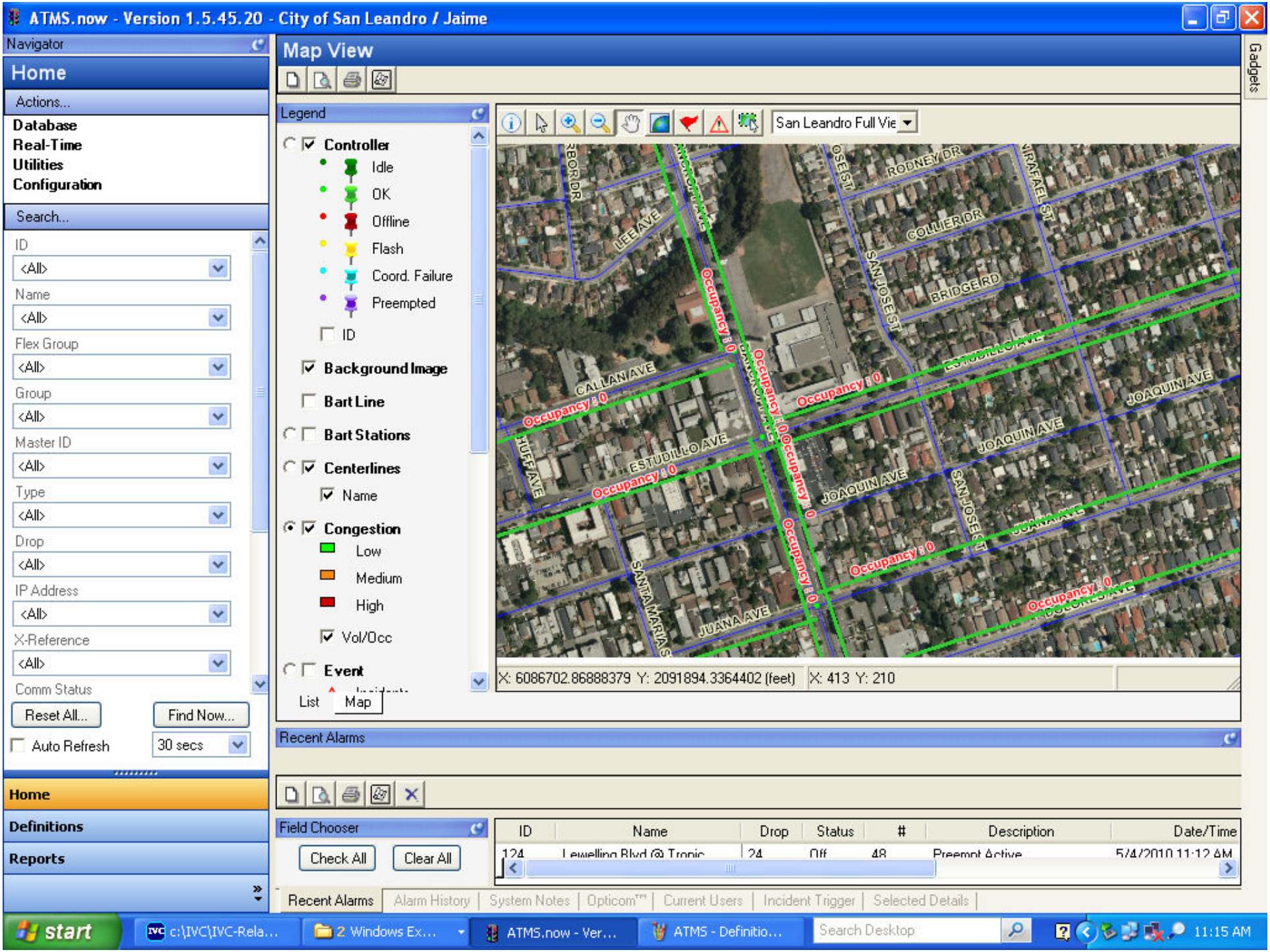
Description
Date/Time
Recent Alarms
Alarm History
System Notes
Opticom™
Current Users
Incident Trigger
Selected Details
start
c:\IVC\IVC...
ATMS - Ma...
Removable...
ATMS.now...
http://192...
Search Desktop
10:43 AM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Drop
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IP Address
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X-Reference
<All>
Comm Status
Reset All...
Find Now...
Auto Refresh
30 secs
Home
Definitions
Reports
Map View
Legend
Controller
Idle
OK
Offline
Flash
Coord. Failure
Preempted
ID
Background Image
Bart Line
Bart Stations
Centerlines
Name
Congestion
Low
Medium
High
Vol/Occ
Event
List
Map
San Leandro Full Vie
RODNEY DR
COLLIER DR
BRIDGE RD
LEE AVE
SAN JOSE ST
CALLAN AVE
HUFF AVE
ESTUDILLO AVE
JOAQUIN AVE
SANTA MARIA AVE
JUANA AVE
Occupancy : 0
X: 6086702.86888379 Y: 2091894.3364402 (feet)
X: 413 Y: 210
Gadgets
Recent Alarms
Field Chooser
Check All
Clear All
ID
Name
Drop
Status
#
Description
Date/Time
124
Lewelling Blvd @ Tropic
24
Off
48
Preempt Active
5/4/2010 11:12 AM
Recent Alarms
Alarm History
System Notes
Opticom™
Current Users
Incident Trigger
Selected Details
start
c:\IVC\IVC-Rela...
2 Windows Ex...
ATMS.now - Ver...
ATMS - Definitio...
Search Desktop
11:15 AM

Future Upgrade Plan

- Upgrade to traffic adaptive and traffic responsive control strategy
- Expand video recording capacity
- Install more detection and CCTV cameras
- Expand communications to isolated signals
- Upgrade existing substandard signals
- Install new signals
- Post real time traffic information on the web
- Share real-time traffic information

Future Upgrade Plan

- Establish traffic data collection stations
- Citywide Wireless Network
- Emergency Alert System
- Incident Management Center
- Temporary CCTV cameras
- Data Acquisition System
- Traffic Control Device Inventory System
- Emergency Detour Route

Project Summary